AMENDMENTS TO THE CLAIMS

1. (Currently Amended)   An audio-signal-processing apparatus for processing input-audio-signals, each input-audio-signal comprising a musical sound that includes a fundamental-tone having a first frequency, and a harmonic-tone having a second frequency that is an integral multiple frequency of the first frequency, said apparatus comprising:

a band-decomposition unit ~~unit, having a decomposition characteristic, operable~~ operable to decompose a low frequency component of the input-audio-signals into a first frequency band and a second frequency band, the first frequency band and the second frequency band being different frequency bands, and the fundamental-tone being included in the first frequency band and the harmonic-tone being included in the second frequency band ~~a plurality of frequency components that have different frequency bands based on the decomposition characteristic~~;

a harmonic-series-generating unit operable to generate a harmonic-tone ~~component~~ component ~~based on at least one of the plurality of frequency components~~ for the fundamental-tone included in the first frequency band, and a harmonic-tone component for the harmonic-tone included in the second frequency band; and

a composition unit operable to compound the input-audio-signals, ~~and~~ the harmonic-tone component for the fundamental-tone in the first frequency band, and the harmonic-tone component for the harmonic-tone included in the second frequency band generated by said harmonic-series-generating unit,

wherein a bandwidth of the first frequency band and a bandwidth of the second frequency band are defined based on at least one of a lowest fundamental frequency of the musical sound and a low interval limit ~~said band-decomposition unit is operable to decompose the low frequency component of each of a fundamental-tone and harmonic-tones of the fundamental-tone initially in a same band such that each belongs to a different frequency band~~.

2-4. (Canceled)

5. (Currently Amended)   The audio-signal-processing apparatus of claim 1, wherein the bandwidth of the first frequency band and the bandwidth of the second frequency band ~~a band~~

2

~~width of each of the different frequency bands is~~ are from 15Hz to 50Hz.

6. **(Currently Amended)** The audio-signal-processing apparatus of claim 1, wherein <u>the bandwidth of the first frequency band and the bandwidth of the second frequency</u> <u>band</u> ~~a band-width of each of the different frequency bands is~~ <u>are</u> from 15Hz to 30Hz.

7. **(Previously Presented)** The audio-signal-processing apparatus of claim 1, wherein said band-decomposition unit comprises a low-pass filter operable to extract frequency components in a lowest register.

8. **(Previously Presented)** The audio-signal-processing apparatus of claim 1, wherein said band-decomposition unit comprises a band-pass filter having a low cut-off frequency that is lower than a lowest fundamental frequency of a musical instrument.

9. **(Currently Amended)** The audio-signal-processing apparatus of claim 1, further comprising a delay device operable to compensate for a processing delay between the harmonic-tone component <u>for the fundamental-tone included in the first frequency band and the</u> <u>harmonic-tone component for the harmonic-tone included in the second frequency band,</u> and the input-audio-signals.

10. **(Currently Amended)** The audio-signal-processing apparatus of claim 1, further comprising a gain control device operable to adjust a gain of the input-audio-signals and a gain of the harmonic-tone component <u>for the fundamental-tone included in the first frequency band and</u> <u>the harmonic-tone component for the harmonic-tone included in the second frequency band</u> generated by said harmonic-series-generating unit.

11. **(Currently Amended)** An audio-signal-processing apparatus <u>for processing input-</u> <u>audio-signals, each input-audio-signal comprising a musical sound that includes a fundamental-</u>

3

tone having a first frequency, and a harmonic-tone having a second frequency that is an integral multiple frequency of the first frequency, said apparatus comprising:

a sum component output unit operable to receive input-audio-signals of a first channel and input-audio-signals of a second channel and output a sum component of the input-audio-signals of the first channel and the input-audio-signals of the second channel;

a band-decomposition unit ~~unit, having a decomposition characteristic,~~ operable to decompose ~~the sum component into~~ a low frequency component of the input-audio-signals into a first frequency band and a second frequency band, the first frequency band and the second frequency band being different frequency bands, and the fundamental-tone being included in the first frequency band and the harmonic-tone being included in the second frequency band~~a plurality of frequency components that have different frequency bands based on the decomposition characteristic~~;

a harmonic-series-generating unit operable to generate a harmonic-tone component ~~component based on at least one of the plurality of frequency components~~ for the fundamental-tone included in the first frequency band, and a harmonic-tone component for the harmonic-tone included in the second frequency band;

a first composition unit operable to compound the input-audio-signals of the first channel, ~~and~~ the harmonic-tone component for the fundamental-tone included in the first frequency band, and the harmonic-tone component for the harmonic-tone included in the second frequency band generated by said harmonic-series-generating unit; and

a second composition unit operable to compound the input-audio-signals of the second channel, ~~and~~ the harmonic-tone component for the fundamental-tone included in the first frequency band, and the harmonic-tone component for the harmonic-tone included in the second frequency band generated by said harmonic-series-generating unit,

wherein a bandwidth of the first frequency band and a bandwidth of second frequency band are defined based on at least one of a lowest fundamental frequency of the musical sound and a low interval limit ~~said band-decomposition unit is operable to decompose the low frequency component of each of a fundamental-tone and harmonic-tones of the fundamental-tone initially in a same band such that each belongs to a different frequency band~~.

4

12. **(Currently Amended)** An audio-signal-processing method for processing input-audio-signals, each input-audio-signal comprising a musical sound that includes a fundamental-tone with a first frequency, and a harmonic-tone with a second frequency that is an integral multiple frequency of the first frequency, said method comprising:

decomposing a low frequency component of the input-audio-signals into a first frequency band and a second frequency band, the first frequency band and the second frequency band being different frequency bands, and the fundamental-tone being included in the first frequency band and the harmonic-tone being included in the second frequency band~~a plurality of frequency components that have different frequency bands based on a decomposition characteristic~~;

generating a harmonic-tone component for the fundamental-tone included in the first frequency band, and a harmonic-tone component for the harmonic-tone included in the second frequency band~~based on at least one of the plurality of frequency components~~; and

compounding the input-audio-signals,~~and~~ the generated harmonic-tone component for the fundamental-tone included in the first frequency band, and the generated harmonic-tone component for the harmonic-tone included in the second frequency band,

wherein a bandwidth of the first frequency band and a bandwidth of the second frequency band are defined based on at least one of a lowest fundamental frequency of the musical sound and a low interval limit ~~said decomposing comprises decomposing the low frequency component of each of a fundamental-tone and harmonic-tones of the fundamental-tone initially in a same band such that each belongs to a different frequency band~~.

13-15. **(Canceled)**

16. **(Currently Amended)** The audio-signal-processing method of claim 12, wherein a ~~band width~~ the bandwidth of ~~each of~~ the first frequency band and the bandwidth of the second frequency band ~~different frequency bands is~~ are from 15Hz to 30Hz.

17. **(Currently Amended)** The audio-signal-processing method of claim 12, wherein

5

said decomposing <u>further</u> comprises decomposing the low frequency component of the input-audio-signals into ~~the plurality of frequency components that have the~~ different frequency bands based on ~~the~~<u>a</u> decomposition characteristic ~~with~~<u>of</u> a low-pass filter operable to extract frequency components in a lowest register.

18. **(Currently Amended)** The audio-signal-processing method of claim 12, wherein a ~~band width of each of~~ the <u>bandwidth of the first frequency band and the bandwidth of the second frequency band</u> ~~different frequency bands is~~ <u>are</u> from 15Hz to 50Hz.

19. **(Currently Amended)** The audio-signal-processing method of claim 12, further comprising compensating for a processing delay between the generated harmonic-tone component <u>for the fundamental-tone included in the first frequency band and the harmonic-tone component for the harmonic-tone included in the second frequency band,</u> and the input-audio-signals.

20. **(Currently Amended)** The audio-signal-processing method of claim 12, further comprising adjusting a gain of the input-audio-signals and a gain of the generated harmonic-tone component<u> for the fundamental-tone included in the first frequency band and the harmonic-tone component for the harmonic-tone included in the second frequency band</u>.